CLAIMS

Now, therefore, at least the following is claimed:

1   1. A system, comprising:

2   a plurality of nodes communicating signals pursuant to a single channel plan,

3   said channel plan having predefined characteristics for each of a plurality of signal

4   channels;

5   a spectrum analyzer;

6   a switch capable of connecting one of said nodes with said spectrum analyzer;

7   and

8   a controller controlling said switch to select said one node, said controller

9   capable of testing communication of signals on at least one of said nodes by

10   conducting a test plan, said test plan being designed based upon said channel plan, said

11   test plan prescribing measurement of at least one signal parameter.

1   2.   The system of claim 1, wherein said nodes are part of a television cable

2   network.

1   3.   The system of claim 1, wherein said test plan prescribes comparison of

2   a signal associated with at least one channel with at least one predefined signal

3   threshold.

1   4.   The system of claim 1, wherein said test plan includes comparing a

2   signal parameter with an alarm limit and further comprising the step of communicating

3   an alarm to a graphical user interface when said critical alarm limit is exceeded.

1   5.   The system of claim 1, wherein said test plan includes comparing a

2   signal parameter with an alarm limit and wherein said controller is configured to

3   conduct said test plan periodically over time, to generate an alarm when said alarm

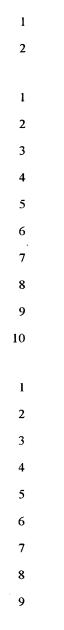4   limit is exceeded, and to count alarms that a particular node generates.

6.   The system of claim 1, wherein said test plan prescribes performing any one or a combination of the following measurements: average noise power, average TDMA power, spectrum scan, discrete frequency scan, burst count, signal-to-noise ratio, or percentage available.

7.   The system of claim 1, further comprising a graphical user interface and wherein said controller is configured to communicate a result of said test plan to said graphical user interface for displaying said result on a screen.

8.   The system of claim 1, wherein said controller is configured to perform said testing step periodically over time and to store test results over time.

9.   The system of claim 1, further comprising an editor for enabling a user to define said channel plan by the following steps:

retrieving a plurality of device templates corresponding with respective specific devices, each of said device templates defining signal characteristics associated with each said respective specific device; and

defining said channel plan by combining a plurality of said device templates.

10.   The system of claim 1, wherein said channel plan comprises at least a label describing use of the corresponding channel, a center frequency, a bandwidth, and a power level.

11.   The system of claim 10, wherein said channel plan further comprises information regarding the carrier roll-off.

12.   The system of claim 10, wherein said channel plan further comprises a default status indicator identifying whether the corresponding channel is currently allocated or reserved for future use.

13.   The system of claim 10, wherein said channel plan further comprises default threshold levels for various tests.

Case No. 10992249

1   14.   The system of claim 10, wherein said channel plan further comprises at

2   least one alternate center frequency that may be utilized by the corresponding channel.

1   15.   A computer readable medium having a program for enabling efficient

2   monitoring of signals communicated along a plurality of nodes, each node having a

3   plurality of signal channels, the signals being measured by a spectrum analyzer, the

4   program comprising:

5   means for receiving signal data sampled by the spectrum analyzer; and

6   means for testing communication of said signals on at least one of said nodes

7   by conducting a test plan on said signal data, said test plan being designed based upon

8   a channel plan, said test plan prescribing measurement of at least one signal parameter,

9   said channel plan defining signal characteristics of each of said signal channels on each

10   of said nodes.

1   16.   A method for enabling efficient monitoring of electrical signals

2   communicated along a plurality of nodes, each node having a plurality of signal

3   channels, comprising the steps of:

4   communicating said signals along each of said plurality of said nodes pursuant

5   to a channel plan, said channel plan having predefined characteristics for each of said

6   signal channels; and

7   testing communication of said signals on at least one of said nodes by

8   conducting a test plan, said test plan being designed based upon said channel plan, said

9   test plan prescribing measurement of at least one signal parameter.

1   17.   The method of claim 16, wherein said test plan prescribes comparison

2   of a signal associated with at least one channel with at least one predefined signal

3   threshold.

1   18.   The method of claim 16, wherein said test plan includes comparing a

2   signal parameter with an alarm limit and further comprising the step of communicating

3   an alarm to a graphical user interface when said critical alarm limit is exceeded.

1   19.   The method of claim 16, wherein said test plan includes comparing a

2 signal parameter with an alarm limit and further comprising the steps of:

3   performing said testing step periodically over time;

4   generating an alarm when said alarm limit is exceeded; and

5   counting alarms that a particular node generates.

1   20.   The method of claim 16, wherein said test plan prescribes measuring

2 any one or a combination of the following: average noise power, average TDMA

3 power, spectrum scan, discrete frequency scan, burst count, signal to noise ratio,

4 percent available, carrier alive, or spectrum differential.

1   21.   The method of claim 16, further comprising the step of;

2   communicating a result of said testing step to a graphical user interface; and

3   displaying said result on a screen.

1   22.   The method of claim 16, further comprising the step of:

2   performing said testing step periodically over time; and

3   storing test results over time.

1   23.   The method of claim 16, further comprising the step of defining said

2 channel plan by the following steps:

3   retrieving a plurality of device templates corresponding with respective specific

4 devices, each of said device templates defining signal characteristics associated with

5 each said respective specific device; and

6   defining said channel plan by combining a plurality of said device templates.

1   24.   The method of claim 16, wherein said channel plan comprises a label

2 describing use of the corresponding channel, a center frequency, a bandwidth, and a

3 power level.

1   25.   The method of claim 24, wherein said channel plan further comprises

2 information regarding the carrier roll-off.

26. The method of claim 24, wherein said channel plan further comprises a default status indicator identifying whether the corresponding channel is currently allocated or reserved for future use.

27. The method of claim 24, wherein said channel plan further comprises default threshold levels for various tests.

28. The method of claim 24, wherein said channel plan further comprises at least one alternate center frequency that may be utilized by the corresponding channel.

29. The method of claim 16, wherein said test plan includes at least one test pertaining to a corresponding node, as a whole, and at least one test pertaining to at least one channel of said corresponding node.